

What we claim is:

1. A method for removing an edge region of a layer applied to a substrate for use in a microlithographic process, in which method, a laser beam is imaged onto the edge region, wherein the laser beam removes the edge region by evaporation.
2. The method according to claim 1, wherein the laser beam is focused in the form of a point or a line onto the edge region by means of an imaging means.
3. The method according to claim 1, wherein the laser beam is imaged onto the edge region in such a manner that the laser beam is incident on the surface of the substrate in an essentially perpendicular direction.
4. The method according to claim 1, wherein the laser beam is imaged onto the edge region in such a manner that the laser beam is incident on a plane spanned by the substrate surface in an essentially parallel direction, wherein the laser beam is incident on an edge of the substrate in a tangential direction.
5. The method according to claim 1, wherein evaporated fragments and particles of the edge region are removed by a vacuum device or a blower device, which is arranged in the proximity of the edge region.
6. The method according to claim 1, wherein the substrate is essentially circular and the layer comprises a coating of a photoresist.
7. The method according to claim 1, wherein the laser beam and the substrate are moved relative to one another, while the laser beam scans the edge region in order to remove the latter.
8. The method according to claim 1, wherein the edge region removed by the laser beam or a test field coated in an essentially identical manner to the edge region, is optically scanned, in order to adapt or regulate a parameter of the

laser beam in such a manner that the edge region or the test field is essentially removed in its entirety.

- 5 9. The method according to claim 1, wherein an aperture means prevents the laser beam from being imaged onto regions of the substrate other than the edge region, which is to be removed.
- 10 10. A method for coating a substrate with a layer, in particular, with a photoresist layer, for use in a microlithographic process, in which method, a layer is applied to the substrate, and an edge region of the applied layer is removed by imaging a laser beam onto the edge region, so that the laser beam removes the edge region by evaporation.
- 15 11. An apparatus for removing an edge region of a layer applied to a substrate, for use in a microlithographic process, comprising a laser light source for emitting a laser beam, and imaging means for imaging the laser beam onto the edge region of the substrate, wherein the laser light source is adapted for removing the edge region by means of the laser beam by evaporation.
- 20 12. The apparatus according to claim 11, wherein the imaging means is designed to focus the laser beam onto the edge region in the form of a point or line.
- 25 13. The apparatus according to claim 11, wherein the imaging means is designed to image the laser beam onto the edge region in such a manner, that the laser beam is incident on the surface of the substrate in an essentially perpendicular direction.
- 30 14. The apparatus according to claim 11, wherein the imaging means is designed to image the laser beam onto the edge region in such a manner, that the laser beam is incident on a plane spanned by the surface of the substrate in an essentially parallel direction, wherein the laser beam is incident on an edge of the substrate in a tangential direction.

15. The apparatus according to claim 11, wherein a vacuum device or a blower device is arranged in the proximity of the edge region, in order to remove evaporated fragments and particles of the layer from the edge region by vacuum or blowing.

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16. The apparatus according to claim 11, further comprising a holding means for holding a substrate, which is essentially circular and onto which a photoresist layer has been applied by means of spin coating.

10 17. The apparatus according to claim 11, which is configured in such a manner that the laser beam and the substrate are moved relative to one another, while the laser beam scans the edge region in order to remove the latter.

15 18. The apparatus according to claim 11, further comprising an optical scanning device for scanning optically either the edge region removed by the laser beam or a test field, which is coated in a manner essentially identical to the edge region, in order, in this manner, to adapt or regulate a parameter of the laser beam, in such a manner that the edge region or the test field is removed essentially in its entirety.

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19. The apparatus according to claim 11, further comprising an aperture means to prevent the laser beam from being imaged onto regions of the substrate other than the edge region, which is to be removed.

25 20. An apparatus for coating a substrate with a layer for use in a microlithographic process, comprising:
a coating device for applying the layer to the substrate;
a laser light source for emitting a laser beam; and
an imaging means for imaging the laser beam onto the edge region of the
30 substrate, wherein the laser light source is adapted for removing of the edge region with the laser beam by evaporation.

21. A substrate, which is coated with a layer for use in a microlithographic process, wherein an edge region of the layer is removed by imaging a laser beam onto the edge region for removing the edge region by evaporation.
- 5 22. The substrate according to claim 21, wherein the layer comprises a hardly soluble photoresist.
23. The substrate according to claim 22, wherein the edge region is removed essentially evenly, a front face of the edge region being essentially free from
10 the layer to be removed.